Introduction

The image displayed in the Graphics Window can be saved to disk or printed in a variety of formats: Apple PICT, PCL (Printer Control Language), JPEG, PostScript (supporting image, “move-draw” , and EPS), RGB (Silicon Graphics default image format), and TARGA.

If you wish to save a sequence of images (*e.g.* for a smooth animation or a transient data display), use EnSight’s **keyframe animation** facility.

Basic Operation

Prior to saving your image, be sure no other windows obscure the Graphics Window. If they do, ghosting may occur in the saved image. To save an image:

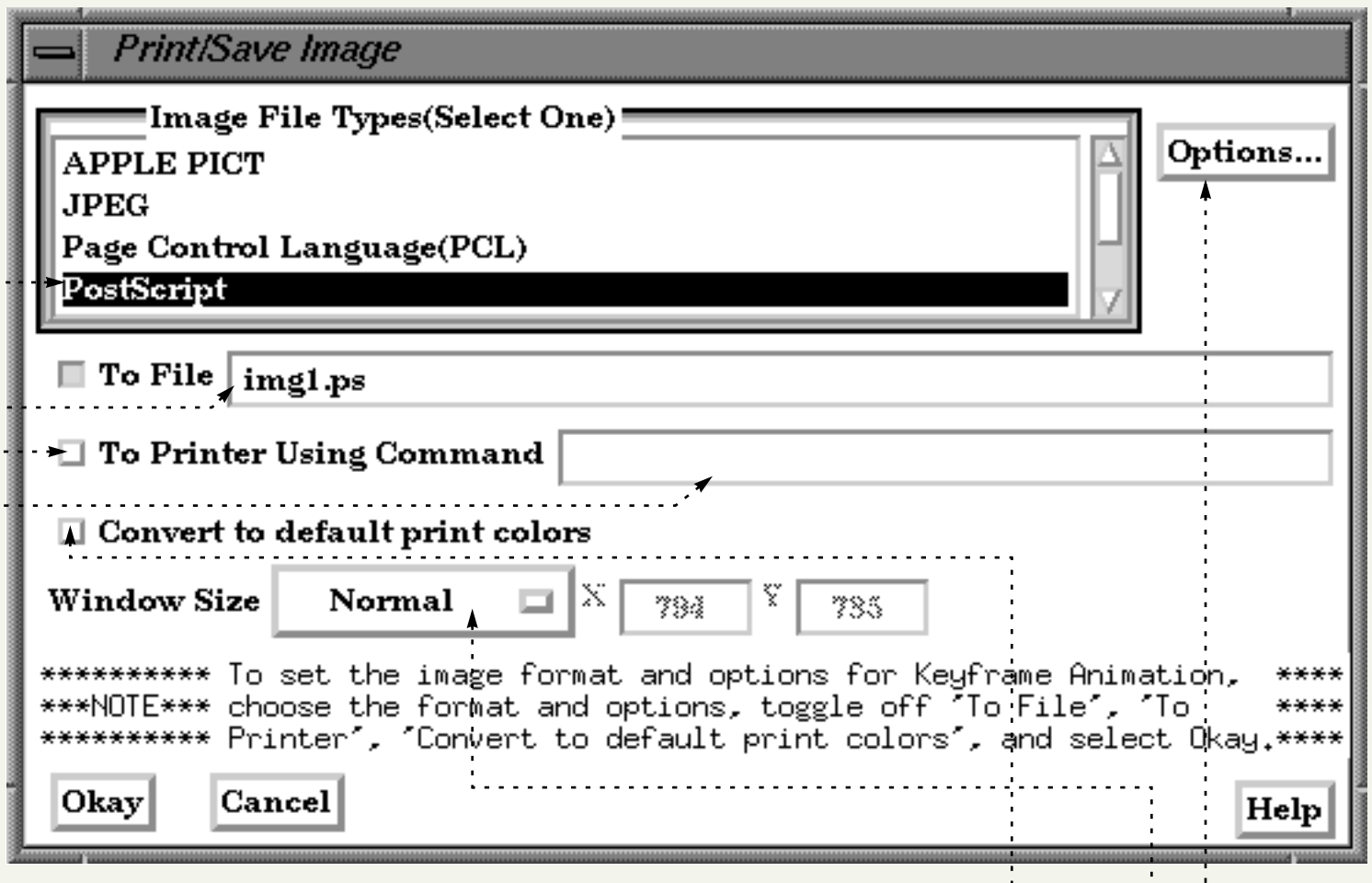
1. **Select File > Print/Save Image....**

2. **Select the desired output format.**

3. **Enter a file name to save the image to disk.**

   – AND/OR –

4. **Toggle the “To Printer ...” button on and enter a print command (see Notes below).**



5. **If desired, automatically convert colors for printing (see notes below).**

6. **If desired, select special options. Options are format-specific – see the sections below for a description.**

7. **If desired, select a window size option. *Normal* is the current size of the Graphics Window and *Full* is full screen size. If the setting is *User Defined*, you can enter the desired size in the X and Y text fields.**

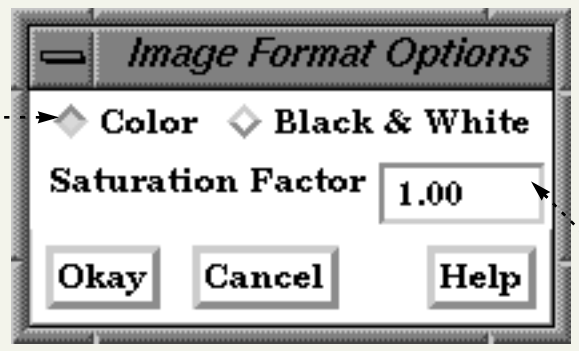
8. **Click Okay.**

Notes:

1. The file is saved or printed from the EnSight client machine – not the server.
2. The printer command should not include the file name. For example, if you normally print with “`lpr -Plaser1 file.ps`” then enter “`lpr -Plaser1`” in the To Printer Using Command field.
3. If you toggle on Convert to default print colors, all viewport background colors are changed to white and any object (part, viewport border, annotation, *etc.*) currently colored pure white (RGB = 1,1,1) will be changed to black.

Options for Apple PICT Format

Select either color or black and white output.



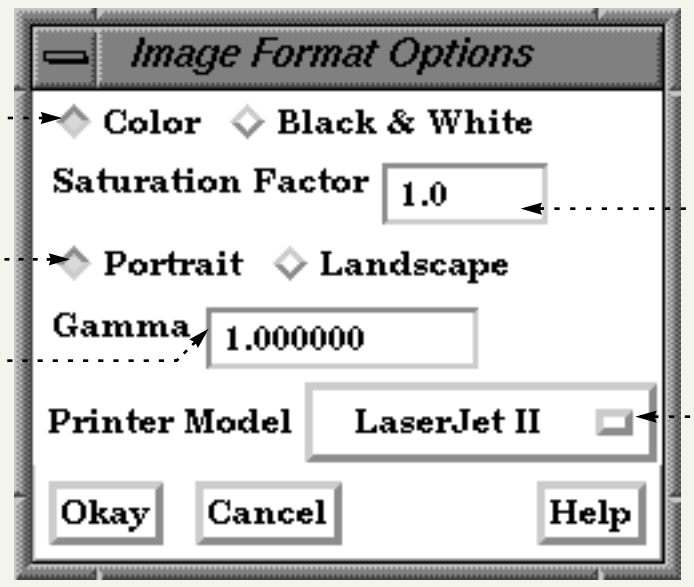
Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.

Options for PCL Format

Select either color or black and white output.

Select Portrait (taller than wide) or Landscape (wider than tall) output orientation.

Set the gamma correction factor. Gamma can correct for nonlinearities in monitor brightness.



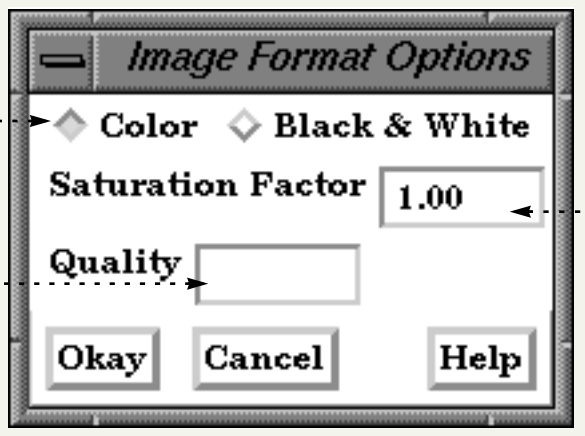
Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.

Select the destination PCL printer model.

Options for JPEG Format

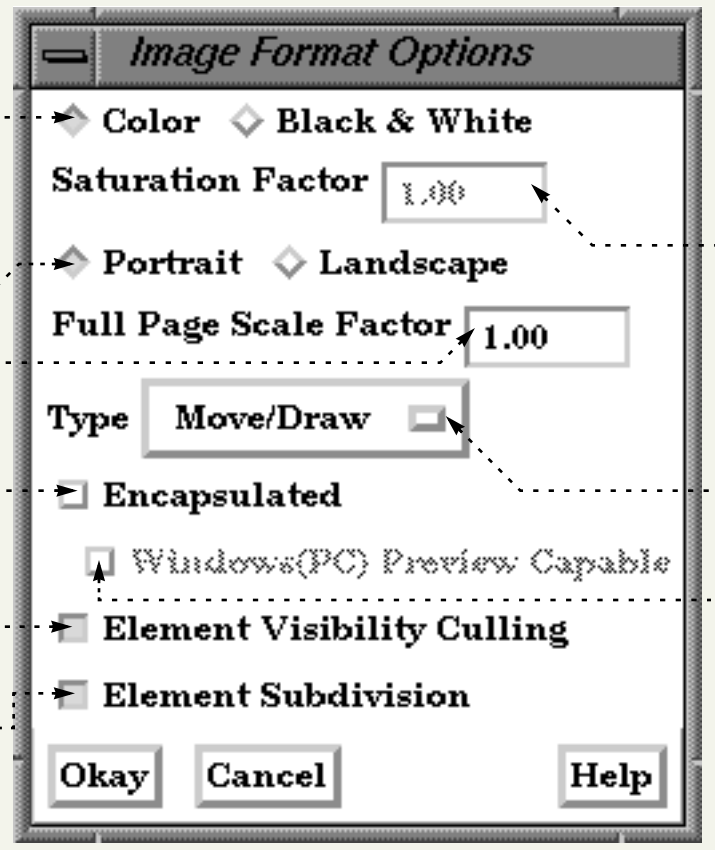
Select either color or black and white output.

Set the desired output quality. The value represents a tradeoff between fidelity and compression: 100 means maximum fidelity and 0 means maximum compression.



Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.

Options for PostScript Format



Select either color or black and white output.

Select Portrait (taller than wide) or Landscape (wider than tall) output orientation.

Set the page scale factor.

Toggle on for Encapsulated PostScript output.

Toggle on to remove invisible geometry.

Toggle on to subdivide geometry for smooth color and shading output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.

Select either "Move/Draw" or "Image" PostScript output (see below).

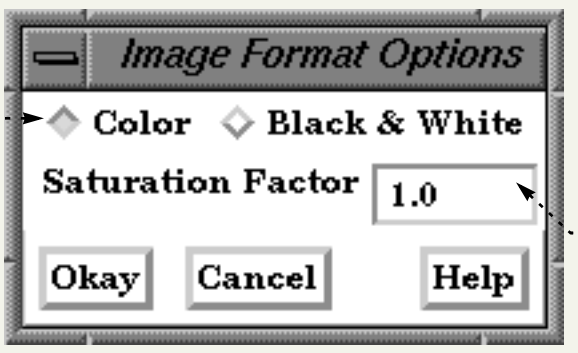
Toggle on to enable a preview image for EPS files (for import into PC Windows applications ONLY – see **Other Notes** below).

The PostScript format handles primitives either as precise drawing instructions (*e.g.* move to here, draw a line to here, fill this region) or as sampled images (pixel data). There are advantages and disadvantages to both.

Move/draw output is *resolution-independent* and will reproduce fine lines and text. Since even low resolution printers have 3-4 times the resolution of a typical graphics workstation (in dots/inch), move/draw PostScript typically produces higher quality output. However, for very large models, the output files can become quite large (even with visibility culling on) and subsequent printing can be slow.

In contrast, image or pixel PostScript saves the pixels of the image in the Graphics Window. Such an image is, by definition, fixed resolution. When printed, the pixels will be scaled to fit the page. Since the printer resolution is higher than the screen resolution, each pixel must be printed larger than it appeared on the screen resulting in visible pixels and jagged edges. To improve the quality of image PostScript output, EnSight will print only 3D geometry as pixels – the remaining objects (annotation text, color legends, and plots) will be output as move-draw instructions and will overlay the image.

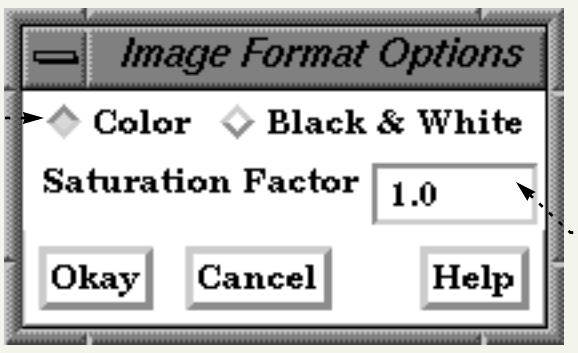
Options for SGI RGB Format



Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.

Options for TARGA Format



Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.

Advanced Usage

Most workstations provide tools to display and manipulate images. Silicon Graphics provides a rich image manipulation environment. See, for example, the manual pages for `imgworks` and `dmconvert`.

There are also some excellent public domain (*i.e.* free) tools for manipulating images. A suite of tools for manipulating and converting images is available from the San Diego Supercomputing Center. You can download pre-complied binaries for most UNIX workstations from the SDSC FTP server: `ftp.sdsc.edu` in `pub/sdsc/graphics/imtools`. ImageMagick is a public domain, X-windows based program for displaying both images and animations (loaded as sequences of images) on a wide variety of platforms. Visit the Web site `http://www.wizards.dupont.com/cristy/ImageMagick.html` for more information.

Other Notes

Almost all desktop publishing, page-layout, or word-processing packages permit importation of Encapsulated PostScript files or PICT files. Macintosh packages recognize files by explicit file typing based on a four letter code (unlike UNIX, which has no intrinsic file-typing). This code is not stored in the file itself, but in an “information file” used by the Finder (the Mac OS) to handle files. EPS files are recognized by the code “EPSF” and PICT images by the code “PICT”. There are various methods of setting this code. File transfer utilities such as “fetch” can set the code during the transfer process. The “FileTyper” utility can be used to directly edit the Finder Information File. Unless this file type is set properly, it is likely that applications will refuse to recognize your EPS or PICT files. Send email to `fetch@dartmouth.edu` for information on fetch.

EPS files typically contain a “preview image” that lets the importing application display a facsimile of the actual graphic for ease in interactive positioning, scaling, or clipping. There are different methods of specifying this image (*e.g.* PICT resources for Macintosh or TIFF files for Windows). Unfortunately, the different methods of specifying the preview image preclude EnSight from providing this capability for import into Macintosh applications. When you import an EPS file, most Macintosh applications will display it as a gray box. You can, however, still resize and position the image and it should print fine. EnSight can, however, attach a preview image that can be used by Windows applications. Enable the “Windows (PC) Preview Capable” toggle in the Image Format Options dialog. The suffix “.EPS” should be used for the resulting files.

See Also

User Manual: **Saving or Printing an Image**